## DEPARTMENT of ENVIRONMENTAL SERVICES Water Division - Watershed Management Bureau

### LAKE TROPHIC DATA

### MORPHOMETRIC:

Lake: DARRAH	POND	Lake Area (ha):	7.00
Town:	LITCHFIELD	Maximum depth (m):	8.4
County:	Hillsborough	Mean depth (m):	1.8
River Basin:		Volume (m³):	128000
Latitude:		Relative depth:	2.8
Longitude:	71°26'40" W	Shore configuration:	1.00
Elevation (f	t): 178	Areal water load (m/yr):	3.80
Shore length	(m): 800	Flushing rate $(yr^{-1})$ :	2.10
Watershed are		P retention coeff.:	0.71
% watershed	ponded: 0.0	Lake type: r	natural

BIOLOGICAL:	23 January 2002	27 June 2001	
DOM. PHYTOPLANKTON (% TOTAL) #1	DINOBRYON 90%	MOUGEOTIA 30%	
#2	MOUGEOTIA 6%	FILAM. GREEN 30%	
#3	ASTERIONELLA 4%	TINY CENTRIC DIATOM SPP	20%
PHYTOPLANKTON ABUNDANCE (units/mL)			
CHLOROPHYLL-A (µg/L)		16.94	
DOM. ZOOPLANKTON (% TOTAL) #1	NAUPLIUS LARVA 65%	CALANOID COPEPOD 25%	
#2	ASPLANCHNA 17%	GASTROPUS 24%	
#3	CALANOID COPEPOD 9%	NAUPLIUS LARVA 13%	
ROTIFERS/LITER	134	141	
MICROCRUSTACEA/LITER	489	227	
ZOOPLANKTON ABUNDANCE (#/L)	634	368	
VASCULAR PLANT ABUNDANCE		Common	
SECCHI DISK TRANSPARENCY (m)		3.6	
BOTTOM DISSOLVED OXYGEN (mg/L)	13.2	5.9	
BACTERIA (E. coli, #/100 ml) #1		1	
#2		< 1	
#3		< 1	

### SUMMER THERMAL STRATIFICATION:

### stratified

Depth of thermocline (m): 4.4 Hypolimnion volume (m³): None Anoxic volume (m³): None

CHEMICAL:	Lake: DARRAH POND Town: LITCHFIELD				
	23 Janua	ary 2002	27 .	June 2001	
DEPTH (m)	1.5	3.0	2.0		4.0
pH (units)	5.0	5.0	4.8		5.0
A.N.C. (Alkalinity)	-0.3	-0.3	-0.9		-0.4
NITRATE NITROGEN	0.09	0.07	0.11		0.08
TOTAL KJELDAHL NITROGEN	0.40	0.40	0.70		1.20
TOTAL PHOSPHORUS	0.007	0.007	0.011		0.013
CONDUCTIVITY (µmhos/cm)	25.2	25.2	26.2		23.7
APPARENT COLOR (cpu)	< 5	< 5	10		17
MAGNESIUM	-		0.25		
CALCIUM			< 1.0		
SODIUM			1.7		
POTASSIUM			0.71		
CHLORIDE	3	3	2		2
SULFATE	3	3	3		3
TN : TP	70	67	74		98
CALCITE SATURATION INDEX					

All results in mg/L unless indicated otherwise

### TROPHIC CLASSIFICATION: 2001

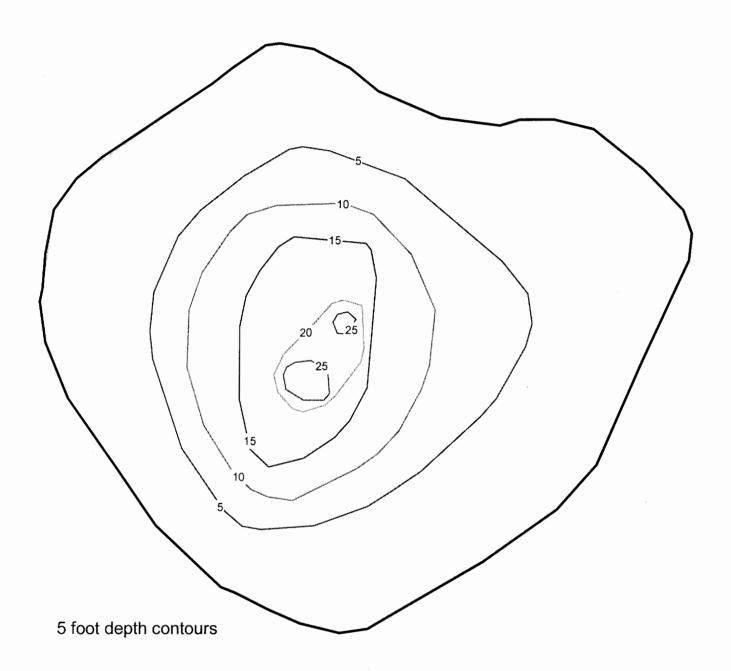
D.O.	S.D.	PLANT	CHL	TOTAL	CLASS
**	2	3	3	8	Meso.

### COMMENTS:

- 1. Previously surveyed in 1985. The planktonic algae biomass (chlorophyll) was an order of magnitude higher in 2001 (16.9 vs 1.6 in 1985). The water clarity went from visible on bottom at 7.6 m in 1985 to 3.6m in 2001. The trophic class changed from oligotrophic to mesotrophic between 1985 and 2001.
- 2. This pond was subjected to a dramatic drawdown of water level in 1999-2000, presumably from excessive withdrawal of groundwater from the area. It was back at full pool during the 2001 survey but the drawdown may have been responsible for the decline in water quality.
- 3. A town recreational area and town beach is located adjacent to the pond.
- 4. This is an acidified pond with negative alkalinity.

# Darrah Pond

## Litchfield







### FIELD DATA SHEET

LAKE: DARRAH POND DATE: 06/27/2001 TOWN: LITCHFIELD

WEATHER: Hot & breezy

DEPTH (M)	TEMP (°C)	*DISSOLVED OXYGEN	OXYGEN SATURATION
0.1	27.4	11.5	145 %
1.0	27.3	10.6	134 %
2.0	26.3	10.4	129 %
3.0	25.2	10.8	131 %
4.0	21.9	11.4	130 %
5.0	16.6	8.6	88 %
6.0	13.3	6.2	59 %
6.5	12.2	5.9	55 %

SECCHI DISK (m): 3.6 COMMENTS:

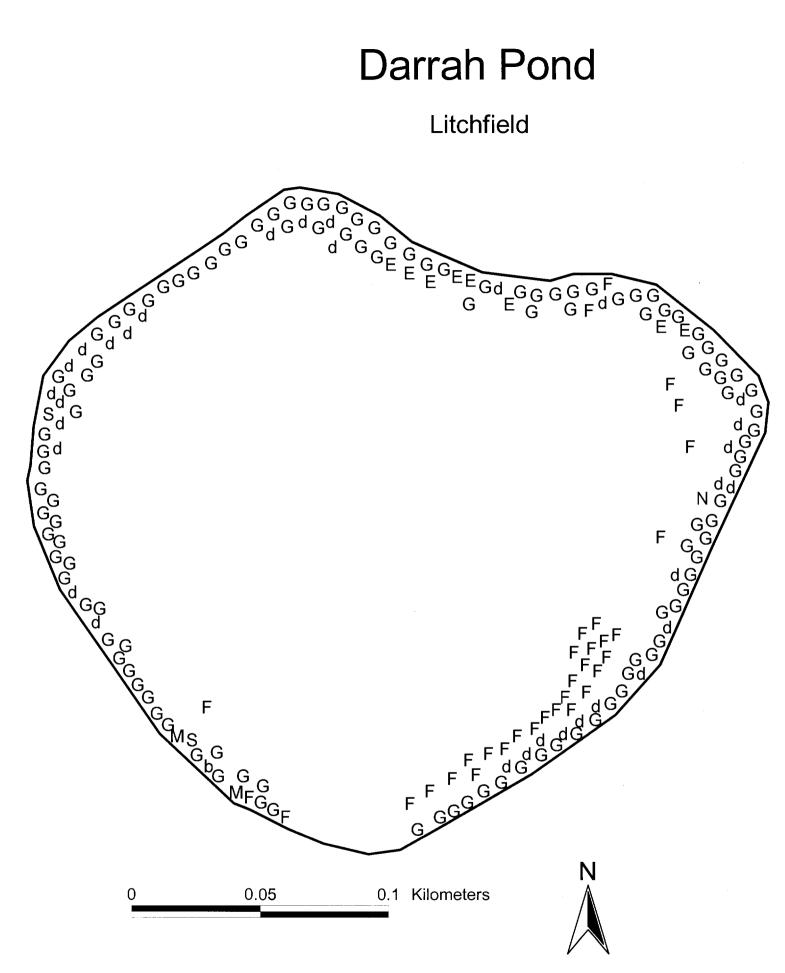
BOTTOM DEPTH (m): 6.7

TIME: 1025

\*Dissolved oxygen values are in mg/L

# Darrah Pond

### Litchfield



### AQUATIC PLANT SURVEY

	TOWN: LITCHFIELD	DATE: 06/27/2001
	PLANT NAME	

	2. 5.2	10MR. DITCHPIEDD DA	IE. 00/2//2001	
Key	PLANT NAME		ADUMDANCE	
ией	GENERIC	COMMON	ABUNDANCE	
F	Nymphoides cordatum	Floating heart	Scattered	
M	Myriophyllum	Native milfoil	Sparse	
G	Gramineae	Grass family	Common	
b	Scirpus	Bulrush	Sparse	
E	Eriocaulon septangulare	Pipewort	Scattered	
N	Nymphaea	White water lily	Sparse	
d	Dulichium arundinaceum	Three-way sedge	Scattered	
S	Sparganium	Bur reed	Scattered	
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OVERALL ABUNDANCE: Common

### **GENERAL OBSERVATIONS:**

- The overall plant abundance would be 'scattered' if not for the grasses.
- Lake was at full pool during the 2001 sampling but was drawn down greatly in 2000. The abundance of grasses and paucity of other aquatic plants may have been due to the previous year's drawdown.
- The water level drawdown in 2000 was attributed to excess removal of groundwater in the area.